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## THE DEVELOPMENT OF MEANING

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*Introduction.* The following introspections and interpretations thereof are here presented as a constructive criticism of the recent investigations of Meaning by Moore and McDonough,<sup>1</sup> and as a forerunner of a detailed theoretical discussion of the problem of Meaning.

In an investigation of Choosing<sup>2</sup> it was found that in the act of giving a detailed introspection the observers not only found themselves giving a description of immediate content, so-called, but also found themselves interpreting this content even as it took place. The more detailed the introspection, the sooner after this content appeared did the reagent interpret it. In other instances the reagent did not so interpret his experiences until they had passed and gone.

These facts led to the conclusion that many of our so-called unanalyzable mental processes such as Attitudes, Thoughts, Consciousness of the Self and the like are interpretations, which the observers have failed to analyze owing to lack of training or ability. These facts also led to the conclusion that such "interpretative periods," as these tendencies were called, are legitimate features of any introspection, providing they are properly analyzed and recognized as such.

These "interpretative periods" are no more and no less than the development of meaning. They are complex meanings in that they are definitely analyzable into sensory and imaginal components and involve a definitely describable behavior of attention.<sup>3</sup>

In the experience of the writer it has very frequently turned out that the development of meaning, itself, may assume various forms under the guise of "feelings of meaning," "awareness of meaning," "consciousness of familiar meaning," "recognition

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<sup>1</sup>McDonough, A. R. The development of meaning. *Psychol. Monog.*, Vol. 27, 1919, 443-515. Moore, T. V. Image and meaning in memory and perception. *Psychol. Monog.*, Vol. 27, 1919, 69-296.

<sup>2</sup>Wheeler, R. H. An experimental investigation of the process of choosing, *Univ. of Ore. Publ.*, Vol. 1, No. 2, 1920, 59 pp.

<sup>3</sup>See Wheeler, *op. cit.*, 33ff. 51 f.

of meaning" and the like, according to the observer's predisposition to label such experiences in one fashion or another. But just as in the case of the attitudes—acceptance, rejection, surprise, etc.—and consciousness of the self, "awareness of meaning" and "feelings of meaning" are interpretative periods. They are in themselves analyzable and constitute a stage in the development of meaning or in the recognition of meaning when the reagent is assuming an introspective attitude. When the reagent is not assuming an introspective attitude any attempt to describe them fails, for the contents are so numerous and their duration so fleeting that one's attention is entirely unable to cope with the complexity of the situation.

The following introspective data are typical of a vast amount of material of all sorts and descriptions which might be offered in demonstrating that development of meaning need not escape the observer even in its minor details. The introspections are the author's, obtained in the laboratory, with the aid of an expert assistant.

*Introspective data.* As far as possible, "interpretations" are set off from "descriptions of content" by means of parentheses.

1. *Instructions:* "You will be given a word to which I want you to react as soon as you are conscious of the meaning. Ready, now."

KNIFE. "At the outset I was focally conscious of the word as spoken by the experimenter; attention centered itself upon the long 'i' sound of the word, momentarily, and then shifted to the 'f' quality. These processes had hardly developed when I found myself becoming tense about the vocal organs and in my right arm. Together with these motor reactions there appeared visual imagery of a knife with two blades protruding at right angles to the body of the knife. One blade was smaller than the other but no other details except the steel color and the shape of the blades stood out in this imagery. Then the handle of the knife clarified somewhat and I saw in this imagery the small wrinkles and the varying shades of brown and black which characterize such a handle. This imagery did not develop very far, for at once, breaking into consciousness, was the 'idea', 'cutting instrument'. This idea consisted first of a slight shift of my line of regard from the visualized knife upward and to the right, where I visualized what might have developed into the complete image of a paring knife; but in this latter imagery there appeared only the broad thin blade with the cutting edge upward and shining as if it had recently been sharpened; along the edge were tiny scratches as if made by a sharpening instrument; and at one end of the blade there showed about one-quarter inch of a reddish-brown handle. (In describing the details of this imagery the very use of language makes it seem as if meaning were present when it had not yet developed. I was not aware of the fact, at the time, that I was imaging a paring knife; nor was I aware of the fact as such that the paring knife had recently been sharpened. I have merely been describing the features which stood out in the imagery.) Meanwhile, the motor tenseness which had developed at the outset persisted and my attention was again claimed by it; it was increasing in intensity and was spreading to take in the muscles of my chest and shoulders. (Up to this time the kinaesthesia had constituted the beginnings of a recognition-consciousness, or a "feeling of mean-

ing," or the beginnings of a consciousness that the word 'knife' was familiar.) Just as this motor reaction was spreading I had in vague, fleeting terms the vocal-motor image of 'cut'; but before further verbal imagery came my attention was again claimed by the bodily kinaesthesia. (Here the meaning 'knife-as-a-cutting-instrument' had begun to develop. It seems as if I should then for the first time have been able to say that the meaning of the stimulus-word had become conscious.) The verbal 'cut' then elaborated to the vocal-motor 'cutting instrument.' Here the motor reaction increased still more in its scope. (I was reacting to the 'meaning'; but here the reaction was merely an intensification and prolonging of the kinaesthesia which had already constituted the core of the meaning itself.) I found myself attending to the experimental surroundings, momentarily, as if the task had been completed; relaxation tended to set in, but this was inhibited by the development of further meaning. The 'idea' occurred to me that 'knife' might mean an 'instrument used in eating.' This is an interpretation which followed a flashy visual image of a silver eating-knife poised as if in someone's hand but with no hand visible; it was located in front of a very diffuse and vague white background which I later interpreted, vocal-motor fashion, to be a table-cloth. The class-meaning 'instrument' was not present to consciousness as such except in the vocal-motor tendency to define the knife; this latter tendency appeared at once upon the appearance of the visual imagery of the eating-knife, and gave way at once to an awareness of the instructions and to the *Aufgabe*-consciousness to begin to introspect. At no time during the experience was there any meaning present to consciousness as such other than in imaginal or in kinaesthetic terms."

2. *Instructions*: "You will be presented, visually, a word to which I want you to react after you have mentally defined its meaning. Ready, now."

PAIN. "I reacted at once to the meaning 'sensation, pain.' As my line of regard fell upon the printed word I perceived it at once as a whole, and before I became conscious of the fact that I had thus perceived the word as a whole there developed a muscular jerk about the left shoulder and a tenseness in the throat. (This 'jerk' constituted a feeling of meaning.) Momentarily the quality of tension stood out focally in consciousness, while at the same time I was still, non-focally, perceiving the stimulus-word. (This broadening of the span of attention to take in the stimulus-word and the motor reaction made it possible for me to say that it was the stimulus-word which seemed to possess the meaning. The kinaesthesia was the content of the meaning-consciousness itself.) Then, as this 'jerk' persisted, I had a tactual image of pain so brief and fleeting that it was not at the time localized; it was merely a pain quality, punctiform and sharp; but almost as it came, it disappeared. Momentarily, and after the pain-image had vanished, I tended to visualize the outer surface of my left shoulder as if I were now trying to localize the pain. Along with this I was vaguely conscious, in terms of visual imagery, of my bodily position and of my line of regard as it was extended in the direction of my shoulder. All of this happened before the muscular 'jerk' in the shoulder disappeared. (This latter tendency to visualize the entire situation constituted an interpretative period, an instant in which I was conscious of the fact that meaning had developed. In other words the kinaesthesia itself in the presence of the pain-image constituted the meaning 'sensation of pain,' while the visualization of this kinaesthesia constituted my consciousness of the meaningfulness of the entire experience. When the kinaesthetic 'jerk' became supplemented by visual imagery and the broadening of the span of attention, the interpretative period had developed. There was positively no meaning present over and above what I have described.) I then found myself relaxing. But before this relaxation had completed itself I thought

of another meaning. The stimulus-word then meant 'window-pane'. This developed as follows: I found my line of regard shifting upward and to the right from the visually perceived word, 'pain', and here there tended to develop vague visual imagery of a window, the only features of which that stood out were a blue-grey, smooth surface, translucent but not transparent, as if it might have been ground glass; but I was not conscious of the fact at the time that it might have been ground glass. This consciousness comes only in the telling of the experience. This glass, in my imagery, was surrounded by sash, on two sides, about an inch wide; the sash was dark, with a very faint tinge of brown. My visual image did not take in the left or bottom edge of the pane. My visual attention was centered upon the blue-grey quality of the pane and upon its smooth surface. At that time I was not aware of any verbal tendency to say 'pane,' but immediately after this visual imagery had flashed into consciousness I found myself saying 'window-pane,' and as I did so my visual attention increased in scope to take in the distance between the projected pane and my head. (This latter experience constituted a recognition of the meaning of the experience—an interpretative period. The development of the first meaning in connection with the stimulus-word took place so rapidly that it was all over before my line of regard had swept across the word from left to right. The final meaning developed almost as quickly, and came during the last stages of my motor reaction. The background of kinaesthesia became the vague content of my final interpretation period, and it was toward this kinaesthesia that my attention was spreading during the interpretative period.)"

### 3. Same instructions as before.

SCULPTOR. "I had hardly perceived the word, visually, before I found myself reacting to the meaning. My line of regard fell at the outset upon the first four letters of the word, and before it had shifted far enough to the right to see the remaining letters in focal vision I filled out the word in visual imagery of the remaining letters, together with vocal-motor imagery of the entire word. The latter was exceedingly clear-cut and vivid, especially the imagery of the throat and lip positions in saying the 'tor' portion of the word. Together with this emphasis upon the 'tor' there appeared visual imagery of the 'o'. Along with all of this imagery there suddenly developed tensions about the chest, shoulders and in my right arm. I was already beginning to react. (This kinaesthesia constituted a "feeling of the meaning"—a recognition of the word as a familiar one; but as yet there was nothing in consciousness that involved the concrete meaning of the term. At this juncture I was not aware of the meaning as such. So far the processes might be summed up in the phrase 'I know the meaning of the word.' Neither did this response itself mean familiarity as such; it meant familiarity in virtue of an immediate tendency to review my experiences thus far and to label them. This was done in terms of a tendency for the span of attention to widen and in a tendency to visualize the kinaesthesia and the word itself at the same time.) Then my line of regard shifted in imaginal fashion to a region directly above the printed word; there I visualized a man, very indistinctly and only in part. Here I labelled no features at the time; I am describing only the details of the imagery. I saw the right half of a square jaw, a sunken cheek, very dark skin, wrinkled in such fashion as to indicate that it was very coarse and rough; above was a glimpse of shaggy, frizzled hair; below was a glimpse of one side of a worn, dirty, shaggy coat and of one trouser-leg, dirty, unkempt and badly in need of pressing. The coat and trouser-leg were black. Off to the left these features merged into indefinite blackness and from hence into nothing; to the right this imagery merged into an undifferentiated area of grey and brown—what might have developed into the details of a room.

I then noted in this imagery that the man's right arm was outstretched; I found myself tending to look in the direction of this outstretched arm, but did not actually do so; I was merely aware of incipient eye and neck tensions of turning in that direction. During this time my motor reaction had persisted and had become more intense, constituting a reaction to the entire situation—the stimulus word and the imagery. (Again I was reacting to familiarity and to but the beginning stage in the development of definitized meaning. Up to this time the meaning was 'sculptor as an individual'; and the more fully developed meaning came only after I found myself reacting.) I was then conscious of a tendency for my line of regard to shift suddenly and vigorously to the right of the stimulus-word; there I found developing a visual image of something tall and brown; it did not become definite enough to describe in detail; it had three 'lobes' or sections as if it might have been the beginning of a visualized group of statues of three persons in bronze. This vague, fleeting and undifferentiated visual image rested upon a vague, dark 'something' below, and was projected in front of a dark green background, which latter had no definite limits in any direction. All of this latter imagery was accompanied by a sudden tendency for tensions to develop in my chest, arm and throat, and this tendency was distinctly perceptible over and above the antecedent movements which had to do with reacting. I then found myself visualizing the 'tue' part of the word 'statue,' and was aware of the word 'statue' tapering off in consciousness; I had failed to detect this latter imagery as it had entered consciousness. (All of this latter imagery, together with the motor response, constituted a recognition of the meaning, 'statue,' and was an interpretation period.) Then I had, rushing into consciousness, visual imagery of the head and neck of a horse together with the anterior portions of his shoulders; I was not aware at the time that it was a horse or that it was a marble horse. Brightness, form, shadows, the curve of the neck, jaw, the bony protrusion above the eyes, the forelock, were all featured in the imagery, but the whole experience lasted for only the smallest fraction of a second. (This imagery was the first stage in the development of further meaning—sculpture.) The last feature of the visualized horse to stand out in consciousness was the wrinkled musculature along the anterior-lateral portions of the near shoulder. As my line of regard was leaving this image and as the image was becoming indistinct, I again found vocal-motor imagery tapering off in consciousness. This time it was the vocal-motor 'sculptor'. Again I had failed to note the image as it had appeared. As this latter awareness of verbal imagery developed, part of it spread to a tendency to visualize my throat and the space between my throat and the vanishing image of the horse. (This latter experience constituted an interpretative period. I had now mentally defined the word 'sculptor'.) During the development of the two meanings, 'statue' and 'sculpture', there were two distinct motor 'sets'; these 'sets' differed slightly. The first involved slight eye-strain directed toward the right; the first was not as intense as the second; the first was confined more largely to the throat, chest and eyes, while the second involved incipient movement of my right shoulder as well. Both 'sets' constituted a background for the developing visual imagery and seemed essential to the development of meaning. It was to these kinaesthetics that I invariably found myself referring the meaning itself. At no time during the entire process did I have any affective toning."

4. Introspection on the development of an illusion and its subsequent change in meaning: experienced as the reagent was about to enter the Psychology Building, and taken down at once upon reaching the Laboratory, less than five minutes later. In the meanwhile notes had been scribbled on paper.

"As I was walking toward the laboratory building I was very dimly conscious of my surroundings except now and then of a momentary visual perception of the walk in front of me. Passing focally through consciousness were trains of verbal images such as 'are the corrections too numerous', 'will the printer object', and the like. Together with these verbal processes there appeared fleeting visual images of Mr. H., the chief of the printing establishment, and visual images of presses, cases of type, etc. I saw Mr. H. in his familiar dark grey suit; he was standing opposite at a table and was slightly stooped over; his head was turned downward and slightly to the left; I did not visualize his face distinctly; I did not visualize the whole of the table, but saw its dark brown color, the thickness of the top, and a mass of papers scattered about. None of these features became clear during the brief existence of the imagery. (I seemed to be in the printing room as if I were talking to Mr. H. about the manuscript which I was actually holding in my hand, and saw these details as I should have done had I been at the table opposite him.) Then there appeared a mass of visual imagery of different pages of the manuscript. These were but fleeting glimpses particularly of such pages as were considerably marked with corrections. I then found my attention centered upon several words which began with 'w' and which I had retouched with ink. While my line of regard was thus skipping about from 'w' to 'w' and had reached midway down a visualized page and a little to the right of the center, I had the very fleeting and synopated vocal-motor-auditory: 'Is there someone behind me?' in rising inflection. Up to this time the tactual-kinaesthetic sensations from walking had remained in the dim background of consciousness, as well as a kinaesthesia of frowning, and tensions from the bowed condition of my neck as I walked along in deep thought. At this juncture these kinaesthetic processes began to approach a higher degree of distinctness; then there suddenly developed the motor processes of turning my head, shoulders and upper trunk to look behind me. At this time there was a change in the 'set' of my facial muscles, but this was so diffuse that I can not describe it in detail. There was in this change a relaxation of forehead-muscles from the frowning condition of the moment before. Then rushing into consciousness came visual perceptions of my surroundings—the walk, the green lawn on both sides of the walk, near and distant trees, etc. As my line of regard swept over the distance between me and the trees and adjacent buildings I perceived more and more of the sky in the background, although in indirect vision. This entire change of scene took place very rapidly while I was turning round, but nevertheless the successive focussings of attention upon the near and then upon the farther objects were easily detected. By the time my line of regard was focussed some distance down the walk, and with my eyes centered upon the walk itself, I 'saw' in the sky, above the trees and out over the town several blocks distant, a huge electric sign, in indirect vision. Here my imaginal line of regard was centered upon the first letter of the upper left-hand word, which was clearly a 'W'. The remaining letters of the word and the other words as well were hazy and indistinguishable. But my imagery included the entire sign which had three rows of words, one row above another. It was a typical large electric sign in that the letters were of uniform size, large and blocked; the letters were black, but around them and behind there were faint suggestions of yellow, the yellow forming the sides of the block letters. Surrounding the entire sign was the blue-grey background of the sky. At the instant this imagery appeared and while my line of regard was still focussed upon the 'w' there developed a sudden kinaesthesia of surprise, consisting of tendencies for the musculature of my shoulders and neck to become fixed in a rigid position—a marked change from the gradual movement of the moment before, of tendencies to hold my breath and to droop my lower jaw, of a sudden circulatory change which appeared as a tightness or pressure in the left side of my chest, and of a wave of pressure welling

upward toward my throat. Along with this attitude of surprise there appeared syncopated verbal imagery of "Westinghouse Elec—." I cannot remember that the words were completed. Then my consciousness became focally visual again, and I found myself tending to visualize the words 'Westinghouse Electric Company,' but this imagery was very sketchy and fleeting and only a few letters here and there stood out. This imagery was localized below and to the right of the visual image of the sign and much nearer me. During the appearance of this latter verbal and visual imagery there was a decided change in the muscular 'set' of the moment before; tensions from the attitude of surprise became much less intense; momentarily I was aware that the sign 'meant' Westinghouse Electric Company. This awareness of meaning consisted, first, of a non-focal relaxing of tensions particularly about the neck and shoulders with visualizations of these regions; secondly, of pleasantness which I am totally unable to differentiate from a momentary relaxed condition of muscles about the mouth—a kinaesthetic consciousness; this region was also visualized as I became aware of the kinaesthesia; and, thirdly, of a very diffused bodily set which might be described as 'acceptance' but which did not mean acceptance to me at the time. This attitude consisted of a more general awareness in kinaesthetic terms of my whole trunk, my head and my neck. This was a diffused, relaxed condition, hardly more vivid in one region than another, but distinctly involving a wider region than at first and a decided change from the general muscular 'set' of the moment before. All of this was visualized and was accompanied by a 'set' in the throat as if to make some remark, with the vocal-motor 'I'. (This latter and very complex motor 'set' developed at once upon the appearance of the verbal and visual imagery described above. It constituted an interpretative period—a recognition of the meaning as such.)

No sooner had all this happened than I found myself turning back to pursue my way to the laboratory. The kinaesthesia of turning was hardly perceptible. I had no sooner turned than I again found myself looking back, this time directly toward the region where I had just 'seen' the sign. The transition of objects across the field of vision was again noticed, but this time non-focally. Consciousness was now occupied with the kinaesthesia of turning and with a wonder as to what the experience was all about. This wonder consisted of persisting throat tensions, in the suddenness with which I turned about the second time, and of a questioning consciousness, which latter was characterized by a focalized kinaesthetic strain in the neck as I turned my head around, upward and slightly sidewise along with the movements of turning my shoulders and trunk. There was also faint auditory imagery of something, too indefinite to describe. It was in terms of my own voice and sounded like 'Uhm'. Also there lingered in the background of consciousness the tightness of circulation in and about my chest and neck. As soon as my line of regard was directed into the sky toward the place where the sign had appeared, there developed very suddenly and with great focality a visual perception of what I had previously interpreted to be an electric sign—clouds of smoke. Here the meaning 'smoke from a factory' developed with a degree of vividness which was evidently rendered all the more focal in contrast to the meaning 'electric sign' of the moment before. The first feature of the visual perception to stand out focally was its brightness; attention was centered upon the brightness-quality of the smoke as if in contrast to the blackness of the letters of the moment before. (This statement about contrast is but an interpretation based upon the suddenness with which the brightness-feature of the smoke developed into consciousness.) This behavior of attention was only momentary, for the yellowish tinge of the smoke then stood out focally, accompanied by a non-focal verbal image of the word 'yellow' and a concomitant tendency to visualize a large yellow 'Y' very dimly localized upon the smoke itself as a background. This tendency was so fleeting as to



be almost overlooked. The next features of the smoke to stand out were its motion and its rolling cloud-like formation as it floated across the sky, spreading and becoming thinner as it did so. These details then gave way to incipient tendencies to follow the smoke down and to the right toward its origin, but this motor tendency, together with its shift in line of regard, had but just commenced when I found myself anticipating the source of the smoke by means of visual imagery of a black iron chimney and a red, flat-roofed building. With this imagery there appeared incipient verbal imagery of the word 'gas', and then 'factory'. Then at once a general bodily 'set', much like that described above, developed. (At this time I was not conscious of a difference in meaning nor was I conscious of a similarity in the two 'sets'. These facts are after-thoughts. The confusion comes in being forced to short-cut the introspection by drawing similarities and differences as one introspects. After the experience was over I became conscious of the differences of the two meanings and of the similarities of the two 'sets'.) This second motor 'set' consisted of a very general, wide-spread, intense 'jerk' or tenseness which began in my throat, spread to my face, and then down into my chest and about my shoulders. (I think that this is merely the order in which my attention took in these kinaestheses; it is a sort of introspective analysis which was going on at the time; for just previous to this behavior of attention the strains had developed but were so general and diffused that none of them was localizable nor were any of them definitely describable. They became describable after my behavior of attention toward them seemed to result in their definitization and localization.) Again these tensions seemed at first to be nothing more than a changed condition from the kinaesthesia of turning around. At this time the musculature was not visualized and there developed no attitude of acceptance and no interpretative period; I found myself tending to label the experience immediately afterward, verbal fashion, as the development of meaning. No intervening processes took place other than a tapering off of the kinaestheses and visual imagery from focal attention. This interpretation was a visualization of the region of my throat, together with a tendency to innervate the word 'meaning' and a still further change in the general motor background. This latter change consisted of localized relaxations about the mouth and eyes, while attention took in non-focally a general awareness of the 'resident' bodily kinaesthesia elsewhere, and also a kinaesthetic-static image of lifting myself upward. This was accompanied by dim visual imagery of my body from the trunk up. Much of this imagery and many of the sensory experiences were dim and fleeting. The latter group of experiences, constituting a tendency to label the entire last half of my reaction as the development of meaning, ended the entire affair. (Here the interpretative period was delayed; but we notice the same tendency for attention to broaden its scope and to take in kinaestheses *plus* visualizations of musculature.) Nowhere in the entire experience was there any hint whatever of imageless or sensationless meaning. On the contrary, I was distinctly conscious of the fact, immediately afterward, that images and sensory processes constituted the meaning."

*Discussion of data.* The reliability of such introspections as are given above has been checked repeatedly in the laboratory by means of giving two consecutive introspective accounts of the same process. In no instance have elaborations or important omissions been found. Constant experience over a number of years in giving introspective descriptions of complex experiences has convinced the writer that, elaborate as they are, the descriptions are faithful to the facts.

It is obvious that as far as this reagent is concerned there are no unique meanings nor are there any 'superstructures' of meaning unless one wishes to regard interpretative periods as 'superstructures.' But these 'superstructures' themselves are analyzable and are invariably sensory or imaginal in their content. Bodily kinaestheses added to vocal-motor and visual processes change implicit into explicit meanings. Meanings seem never to be fully developed until the original contents of consciousness which function as the 'process-aspects' of meaning lead to an interpretative period. Without these periods meanings are implicit; they exist only in the behavior and context of original contents. With these interpretative periods the meanings become explicit; they become data of consciousness; whereas before the meanings were only data in consciousness. By means of these interpretative periods the reagent becomes conscious of meanings.

The above introspections are full of 'thoughts,' 'feelings of meaning,' and 'conscious attitudes,' yet none of them reveals the slightest evidence of meaning in the absence of image or sensation.

It is evident that, before an introspection upon meaning is complete, at least three stages must have been analyzed. (1) The reagent must describe what is known as 'original content.' This includes a statement of the imagery and sensation components present in consciousness. Such a procedure is possible only when 'immediate content' is reviewed by assuming an introspective attitude. In other words these original contents must lead to further contents before the former can be described, or before they can become data of consciousness. (2) Insofar as meaning is involved in original content it is implicit. By means of an interpretative period the reagent becomes conscious of the meaning. That is, the meaning becomes explicit. The introspector must analyse this interpretative period, else he will be projecting the consciousness of meaning back into the original contents where the meaning itself was not conscious at all but merely implied in the context and behavior of contents. This interpretative period, in this reagent's case, invariably includes a peculiar behavior of attention in which verbal and visual imagery are tapering off and in which kinaesthesia comes to the foreground and is visualized. (3) This second stage must lead to a third before the reagent can become conscious that the consciousness of meaning is an interpretation. This takes the form of a secondary interpretative period or the form of translating the experience of meaning into the language of introspection.

Where Stage 2 does not develop, the reagent is not conscious of the meaning, but in virtue of Stage 3 he is conscious that

the experience *was* meaningful and refers the meaning to kinaesthesia.

In Stage 1 appears a bodily 'set' along with verbal, visual, or auditory imagery. Imaginal content functions as the stimulus to which the bodily 'set' seems to be a response. Both groups of factors are essential for meaning. Stage 2 appears in terms of this lingering bodily 'set' while the stimulus-imagery is tapering off, and this 'set' is visualized. Attention here broadens to take in the space between the localized stimulus-imagery and the localized kinaesthesia. Both of these groups of factors are essential to Stage 2. Stage 3 includes this same kinaesthetic set, still visualized, but tapering off in consciousness, as one factor, and a verbal tendency to label the experience as meaningful as the second factor.

In each stage, therefore, two sets of factors are essential—a stimulus function and a response function.

*Conclusion.* The development of meaning involves three stages: (1) the original or 'given' process; (2) a subsequent process which interprets the first; (3) a third process which constitutes a final interpretation. The first stage is the original content of consciousness; the second stage is necessary before this original content can become a datum of consciousness; the third stage is essential before the meaning of this datum can become a datum of consciousness.

In other words there are (1) shifting or developing sensory and imaginal contents, and these must shift or develop before their antecedents have finally vanished from consciousness. Along with this development of sensory and imaginal contents there arises a motor 'set' or attitude. An image or a group of images in a context never 'meant' anything in the absence of this motor 'set' or of verbal imagery. (2) These data develop by means of a peculiar broadening of the span of attention to the stage of consciousness of meaning. Here attitudes become conscious attitudes. (3) The motor 'set' undergoes certain changes in emphasis and is supplemented by verbal imagery and further visualization of musculature. This constitutes an awareness that the meaning has been or is now being recognized.

One stage develops suddenly and with no line of demarcation from its antecedent. Stage 2 develops before the contents of Stage 1 have vanished and is a behavior of attention by which we 'know' what these contents are and by which original data *in* consciousness become data *of* consciousness. Stage 3 is a behavior of attention by means of which this knowledge becomes explicit rather than implicit, *i. e.*, by which a recognition is recognized.

Stage 1 consists of process-aspects of the so-called 'given' mental contents and meaning is absent until kinaesthesia appears. In every stage kinaesthesia is the core of the phenomenon which we call meaning. In every stage there is a shift in the emphasis which attention puts upon the contents themselves. It is quite evident, therefore, that kinaesthesia is vital to the development of meaning. In the writer's case, at least, meaning has not been described until kinaesthesia is taken into account. It is quite probable that pure meanings, so-called, are in reality masses of diffuse muscular sensations which the reagent has not succeeded in recognizing and in describing.